

**ABSTRACT OF THE INVENTION**

A system for controlling multiple vehicle includes a twelve volt (12V) / forty-two volt (42V) battery power distribution system that provides direct current. The system converts single phase alternating current to multiple phase alternating current to simultaneously power multiple vehicle systems. A single pulse width modulation generator converts the direct current from the 12V/42V battery power distribution system to alternating current. This provides one power supply path of alternating current, which has a first phase. A splitter device splits the one power supply path of alternating current into three power paths. A lead/lag circuit is used to shift the alternating current of the second path to a second phase different than the first phase of the first power supply path. A second lead/lag circuit for shifts the alternating current of the third path to a third phase different than the first phase or the second phase. This creates a three-phase alternating current power from a single direct current source. The three-phase alternating current is used to power a plurality of induction motors that operate multiple vehicle systems.